

One Minute of Grief:

Emotional Processing in Short-Term Dynamic Psychotherapy for Adjustment Disorder

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Abstract

Objective: Depth of emotional processing has shown to be related to outcome across approaches to psychotherapy. Moreover, a specific emotional sequence has been postulated and tested in several studies on experiential psychotherapy (Pascual-Leone & Greenberg, 2007). This process-outcome study aims at reproducing the sequential model of emotional processing in psychodynamic psychotherapy for adjustment disorder and link these variables with ultimate therapeutic outcome.

Method: A total of 32 patients undergo short-term dynamic psychotherapy participated in the study. Based on reliable clinical change statistics, a sub-group ($n = 16$) presented with good outcome, while another sub-group ($n = 16$) with poor outcome in the end of treatment. The strongest alliance session of each case was rated using the observer-rated system Classification of Affective Meaning States (CAMS). Reliability coefficients for the measure were excellent ($\kappa = .82$).

Results: Using one minute as the fine-grained unit of analysis, results showed that the experience of fundamentally adaptive grief was more common in the in-session process of patients with good outcome, compared to those with poor outcomes ($\chi^2 = 6.56, p = .01, ES = 1.23$). This variable alone predicted 19% of the change in depressive symptoms as measured by the BDI at the end of treatment. Moreover, sequences of the original model were supported and related to outcome.

Conclusions: These results are discussed within the framework of the sequential model of emotional processing and its possible relevance for psychodynamic psychotherapy.

Key-Words: Emotional Processing; Process-outcome; Short-Term Dynamic Psychotherapy; Grief; Sequential Model;

One Minute of Grief: Emotional Processing in Short-Term Dynamic Psychotherapy for Adjustment Disorder

Emotional processing in-session and across therapy sessions, can be considered a core mechanism of change in psychotherapy at large (Castonguay, Goldfried, Wisner, Rauer, & Hayes, 1996; Jaycox, Foa, & Morral, 1998; Magnavita, 2006; Pos, Greenberg, Goldman, & Korman, 2003; Whelton, 2004). Studying this variable from a micro-analytic perspective is important, as it enables one to understand in detail what actually happens in session in terms of emotional change. A model of how emotional processing unfolds on a minute-by-minute micro-basis was developed and tested by Pascual-Leone and Greenberg (2007; Pascual-Leone, 2009) for experiential psychotherapy. Although some of the more widely cited studies on emotional processing are based on either behavioral or experiential treatments, this is also regarded as a key process in psychodynamic psychotherapies, in particular in its short forms (e.g., Davanloo, 1980; McCullough, Kaplan, Andrews, Kuhn, Wolf, & Hurley, 2003). An increasing number of authors with psychodynamic background have elaborated on the role of emotion, although fine-grained process-analyses are still very much in order. Thus, the present study aims at testing the sequential model of emotional processing developed in experiential therapy (i.e., Pascual-Leone & Greenberg) by examining it in the context of short-term dynamic psychotherapy for patients presenting with adjustment disorder and depressive mood.

Emotion in Psychodynamic Psychotherapy

In contemporary psychodynamic theory, in-session lived affects are key elements of the healing process. Experiencing affect while working through profound attachment-injuries or other dynamic patterns is increasingly seen as important (Fosha, 2000). In this context, the broader psychodynamic understanding of “affect” has shifted towards an emerging conceptualization of specific and identifiable emotional experiences (Safran & Greenberg,

1991). Current psychodynamic models discuss the adaptive nature of emotions, as pre-verbal, pre-representational and pre-logic structures (Fosha, 2000; Stern, 2003; for overviews see Safran & Greenberg, 1991; and Stein, 1991). Pre-verbal organizations in memory contain highly relevant information to be accessed and constructed (Lane, Ryan, Nadel, & Greenberg, in press). With the current pressures on shortening the lengths of treatment and increasing effectiveness, psychodynamic techniques have focused on emotional exploration and completion (Davanloo, 1980; Despland, de Roten, & Michel, 2010; Diener & Hilsenroth, 2009; Fosha, 2000, 2004; Gilliéron, 1997), with several technical amendments to the classical psychoanalytic therapy. As such, accessing, accepting, elaborating and completing core adaptive emotions within the therapeutic session can be seen as part of modern psychodynamic treatments (Diener & Hilsenroth, 2009). Such an active focus on emotion in psychodynamic psychotherapy profoundly changes the way patients engage in this model of treatment.

The importance of psychodynamic interventions focusing on emotions by way of interpretations and clarifications of patient's emotional processes has been shown in several studies. McCullough and colleagues (1991) showed, for 16 patients undergoing short-term dynamic psychotherapy, the frequency of emotion oriented interventions was related with therapeutic outcomes at the end of treatment. Consistent results were reported by Hill, Helms, Spiegel and Tichenor (1988), Hilsenroth, Ackerman, Blagys, Baity and Mooney (2003), Town, Hardy, McCullough and Stride (2011) and in the meta-analysis by Diener, Hilsenroth and Weinberger (2007). However, most of the studies did not examine the moment-by-moment emotional change processes in the patient which we think is the first task in the understanding of emotional processing as change mechanism in psychotherapy.

Models of Emotional Processing

Different perspectives on emotional processing can be understood as falling into two major categories. The inhibitory perspective of emotional processing assumes that mental health is related with the inhibition or accurate down-regulation of emotion. The transformational perspective of emotional processing posits that in addition to the regulation of emotion, a more profound meaning-making process is necessary for the patient to be able to experience change. This process evolves sequentially (i.e., step-by-step) and dynamically as the patient works towards emotion resolution (Greenberg & Pascual-Leone, 2006).

Rachman (1980) was the first who defined emotional processing as a process of absorption of emotional disruptions which leave way for other, more adaptive, experiences and behaviors. This definition was used to explain the effects of exposure therapy for anxiety disorders (Foa and Kosak, 1986). Exposure requires that fear-related contents need to be activated in order for novel information to be introduced (e.g., the experience that a feared stimulus is actually benign). As shown by Jaycox, Foa, and Morral (1998), the best improvement in behavioral treatments for patients presenting with post-traumatic stress disorder is characterized by both high initial engagement with the fear-related stimuli and gradual habituation to this stimuli; the intensity of fear-driven behaviors decrease and fade out through a process of habituation. Neuro-imaging studies have suggested a revision of this habituation hypothesis (LeDoux, 1996) and identified inhibitory processes as the mechanisms of change in behavioral treatments for anxiety disorder. This means that mental health is associated with better coping capacities in down-regulating or inhibiting emotion, as suggested by a number of studies using dialectical behavior therapy for borderline personality disorders (Neacsiu, Rizvi & Linehan, 2010; Schnell and Herpertz, 2007). From this behavioral perspective, emotional processing implies the regulation and control of emotional states that are intense or disruptive (i.e., interfering with efficient action). As such, healthy

functioning from this perspective means that the emotional intensity is down-regulated or inhibited.

In contrast, the perspective of emotional processing as a transformation in personal meaning is more consistent with that of psychodynamic therapy. In this approach, emotion is defined as a complex and evolving state in the patient, who progressively works through emotion in therapy towards its completion and eventual resolution (Davanloo, 1980; Fosha, 2000; Lane et al, in press; Stern, 2003). As such, deepening emotional experience allows the patient to access new meanings related to emotion, which ultimately helps to resolve personal conflicts. Earlier work from this perspective has focused on how deeply (or shallow) emotion is processed in-session irrespective of thematic content. Depth of experiencing has shown to be related to outcome across forms of therapy, in particular process-experiential (Pos et al., 2003), cognitive-behavioural (Castonguay et al., 1996) and psychodynamic (Silberschatz, Fretter, & Curtis, 1986). Testing whether depth of experiencing later in therapy mediated the predictive link between experiencing early in therapy and treatment outcome, Pos, Greenberg and Warwar (2009) were able to confirm this hypothesis in experiential psychotherapy. Furthermore, their mediation model showed better indices of fit compared to alternative models that used the therapeutic alliance as a core mediator, or that examined these as parallel processes. However, even though depth of experiencing is a central predictor of therapeutic change, a more detailed understanding is still needed to identify which specific types of emotional experiences are important in session.

In order to conceptualize this emotion transformation process more fully, Pascual-Leone and Greenberg (2007) have developed a sequential model of emotional processing. Their model is rooted in experiential theory of emotional processing originated by Greenberg and Safran (1987, 1989; Safran & Greenberg, 1991). It differentiated between types of emotion and spelled out appropriate interventions. This theory can be synthesized by the

fundamental difference between primary and secondary emotions (also see Greenberg & Paivio, 1997). A *primary emotion* is defined as a person's first gut feeling to a situation, such as fear of threat or anger at violation. It can either be adaptive (i.e., preparing the individual for adaptive action in the world) or maladaptive (i.e., often based on traumatic learning, which does not preparing the individual for adaptive action). A *secondary emotion* is a reactive emotional response to another, more primary, experience. The sequential model of emotional processing (Pascual-Leone & Greenberg, 2007) starts from an undifferentiated, highly aroused, and poorly integrated secondary emotion, and then maps the evolving experience into a primary emotional process of profound acceptance the emergence of agency (see Figure 1). As such, early components of the sequential model (i.e., levels 1 and 2) can be collectively described as *early expressions of distress* (i.e., global distress, fear and/or shame, rejecting anger), which encompasses both secondary and primary maladaptive emotions. In contrast, later components (i.e., level 4) are thought of as *advanced meaning-making* states (i.e., grief/hurt, assertive anger, self-compassion), that describe primary and adaptive emotions. The intermediate level, as shown in Figure 1 (Level 3) comprises negative evaluation (i.e., the cognitive correlate of maladaptive primary emotions, such as fear or shame) and the existential need. According to experiential theory (Greenberg & Paivio, 1997), designating a core unmet need in a specific situation (i.e., for closeness, understanding, respect, independency) is understood as central for emotion transformation to occur.

Taking the initial undifferentiated affective-meaning state of “global distress” as selection criteria, Pascual-Leone and Greenberg (2007) showed that in-session progression through these model components was associated with positive session-outcomes in emotion-focused psychotherapy for depression and unresolved interpersonal trauma. In a follow-up study, Pascual-Leone (2009) examined the variance in emotional states across time by comparing the first 20% of an emotional event with the last 20% of the event. Results showed

that in cases that enjoyed good session-outcomes, emotional experience was not only represented by entering more advanced emotional states (i.e., as shown by Pascual-Leone & Greenberg's model) but also by engaging a broader emotional range. In short, the variance in emotional states during a session increased significantly in good outcome cases as compared to poor-session-outcome cases. Thus, higher variance in one's emotional range, what Pascual-Leone described as an operational definition of *emotional flexibility*, is associated with positive session-outcome. Combining these results, Pascual-Leone (2009) showed that in productive sessions, the duration of collapse moments (i.e., momentary setbacks from advanced meaning-making to early expressions of distress) became shorter as the session progressed. It was concluded that productive emotional processing is characterized by a steady in-session progression where momentary setbacks to (less productive) states of secondary and/or maladaptive emotion were gradually shortened over the course of a good session.

So far, only a single case study has applied these detailed analyses to psychodynamic psychotherapy (Kramer, Pascual-Leone et al., in press). More importantly, no study to date has linked the in-session emotional sequences with distal therapeutic outcomes taken at the end of therapy. The current study does this by examining patterns of in-session emotion and final treatment outcomes in short-term dynamic psychotherapy for adjustment disorder and depressive mood. Such research would help to (a) refine the sequential model of emotional processing, (b) demonstrate its relevance to psychodynamic psychotherapy as well as to a slightly different patient population, and (c) ultimately contribute to an integrative understanding of emotional change in psychotherapy.

Therapeutic Alliance as a Pre-requisite for Emotional Processing

Emotional processing not only depends on its depth, emotion type, and advancement through a transformational process, but it is also contingent on the quality of a therapeutic

alliance, the interpersonal context in which emotional experiences take place (Greenberg & Pascual-Leone, 2006). Pos et al. (2009) showed the importance of adequate levels of therapeutic alliance as a pre-requisite for deeper emotional experiencing in experiential therapy. Considering this, sessions with weaker patient-therapist alliance ratings are likely to eclipse or undermine the observation of optimal emotional work (Fosha, 2000). A study on emotional processing should therefore ensure that the quality of the therapeutic alliance is not a confounding factor and ensure that analyses focus on sessions that are buttressed by a strong alliance.

Hypotheses

The present study examined high-alliance sessions of patients undergoing short-term dynamic psychotherapy (STDP). In that context, (1) we postulated that sessions that were part of cases with good final treatment outcomes would have a higher frequency of advanced meaning making components (i.e., either states of primary assertive anger, grief/hurt, or self-compassion) as compared to sessions taken from poor outcome cases. Note that while Pascual-Leone and Greenberg (2007) showed this to be the case for productive in-session outcomes, the current study relates the same kinds of processes to a treatment's final symptom outcomes. (2) Advanced meaning making components are more often sequentially preceded by earlier model components. Specifically, advanced meaning making states (bottom of Figure 1) will be preceded by intermediate model components (i.e., negative evaluation and existential need; middle of Figure 1), and in turn those will be preceded by early expressions of distress (top of Figure 1). As such, this second hypothesis aimed at replicating the sequence of emotional processing (Pascual-Leone & Greenberg, 2007) but this time in the context of psychodynamic psychotherapy. (3) Emotion transformation in the identified high-alliance sessions follows a general positive slope over the course of the session, as measured on an ordinal scale of emotional transformation. This pattern describes a gradual progression

through the sequential model of emotional processing and will have a greater slope in good outcome as compared to poor outcome cases. Finally, (4) good outcome cases present with shorter regressive moments (briefer collapse times) into early expressions of distress (i.e., either secondary or primary maladaptive emotions), as compared with the duration of collapses endured in poor outcome cases.

Method

Participants

Patients. A total of 32 patients participated in the study. They were self-referred university students at a French-speaking University Consultation Center, treated for problems related to adjustment disorder, with depressive mood. DSM-IV-diagnoses (APA, 1994) were established by a trained researcher-clinician using the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Williams, & Gibbon, 2004) for axes I and II of the DSM-IV (reliability for these diagnoses: $\kappa = .81$). Patients presenting psychosis, addictions, bipolar disorder, and anxious mood were excluded from the sample, in order to increase its homogeneity. Half the sample (50%) presented with co-morbid Major Depression, and another 22% presented with co-morbid Cluster B (histrionic and narcissistic) Personality Disorders. Their mean age was 24.7 years ($SD = 3.8$; range = 19-39); 24 (75 %) were female. Patients were recruited for the parent study on the therapeutic alliance (Kramer, de Roten, Beretta, Michel & Despland, 2009) after their intake session by a member of the research staff. All patients gave written informed consent for their data to be used for research; ethical clearance was obtained beforehand by the ethical commission of the institution's Department of Psychiatry.

Therapists. The therapists ($N = 12$) were experienced psychiatrists and psychotherapists, each with over 10 years of clinical experience in psychodynamic psychotherapy. The therapists did not have access to research data during the study.

Treatment

Short-term dynamic psychotherapy (STDP) is a manual-based (Gilliéron, 1997), time-limited form of psychotherapy based on object-relations psychoanalytic theory (Malan, 1979; Sifneos, 1987). Efficacy has been shown for dynamic psychotherapy in general by a number of studies (Leichsenring, & Leibing, 2003; Crits-Christoph, 1992). The treatment setting was therapists working in private practice and treatment lasted up to one year of weekly sessions, with a mean of 32.1 sessions ($SD = 10.4$; range 7 - 45).

Instruments

Beck Depression Inventory-II (BDI-II). The BDI-II (Beck, Steer, & Brown, 1996) was used in a validated French version (see Bouvard & Cottraux, 2000). This self-report measure assesses depressive symptoms using 21 items. The intensity of each symptom is self-reported on a Likert-type scale (0-3). Internal consistency (Cronbach alpha) for the scale for this sample was .89), while Bouvard and Cottraux (2000) validated the French version. Mean BDI at intake for the entire sample was 10.50 ($SD = 6.56$; ranging from 0 to 31), at discharge 5.84 ($SD = 6.88$; ranging from 0 to 22; $t(1, 31) = 4.49$; $p = .00$; $d = .69$; see table 1).

Symptom Check List-90-R. The SCL-90-R (Derogatis, 1994) is a 90 item questionnaire addressing various somatic and psychological symptoms of distress. These items are scored using a Likert-type scale from 0 (not at all) to 4 (very much). Our study used the Global Severity Index (GSI, score ranging from 0 to 4), which is a mean rated over all symptoms.. Cronbach alpha for this sample was .96, and a French validation study was carried out by Pariente and Guelfi (1990) yielding satisfactory coefficients. While the clinical cut-off score is .80, mean GSI at intake for the entire sample was .91 ($SD = .57$; ranging from .09 to 1.76), at discharge .38 ($SD = .33$; ranging from .00 to 1.33; $t(1, 31) = 9.75$; $p = .00$; $d = 1.14$; see table 1).

Helping Alliance Questionnaire-II (HAq-II). The HAq-II (Alexander & Luborsky, 1986) is a self-report questionnaire assessing the quality of a therapeutic alliance. This questionnaire has 11 items, that are rated on a 6-point Likert-type scale (from -3 to 3), such that total scores can range between -33 and 33. The French validation study was carried out by Bachelor and Salamé (2000) and yielded satisfactory coefficients. Internal consistency for the whole scale was .99. HAq was completed by the patients at the end of each session and reflects the current status of the therapeutic alliance. More psychometric detail of this measure may be found in the parent study (Kramer et al., 2009).

Classification of Affective Meaning States (CAMS). The CAMS (Pascual-Leone & Greenberg, 2005) is an observer-based rating system for the process-assessment of distinct affective-meaning states in psychotherapy sessions. It was originally developed through task analysis, a method used in this case to synthesize emotion focused theory (i.e., Greenberg and Paivio, 1997) with empirical observations from a series of intensive case studies (Pascual-Leone & Greenberg, 2007). The CAMS assesses 10 affective-meaning states that can be ordered on 9-point continuum of emotional transformation: (1) Global distress, (2) Fear/shame, (3) Rejecting anger, (4) Negative evaluation, (5) Need, (6) Relief, (7) Grief/hurt, (8a) Assertive anger, (8b) self-compassion, and (9) Acceptance & agency. In addition, two non-specific codes were also used to preserve the integrity of coding: mixed/uncodable and end code. According to Pascual-Leone (2009), because these describe empirically grounded sequences of emotion, data representing these nine emotion codes can either be treated categorically or they may be ordered linearly on a Degree of Transformation Scale (ordinal scale ranging between 1 and 9; see Pascual-Leone, Greenberg, & Pascual-Leone, 2014).

Procedure

Forming comparison groups. Once treatment was complete, the reliable change index (RCI; Jacobson & Truax, 1991) of pre-post change on the Beck Depression Inventory

(BDI) was computed for each case, categorizing all patients into two sub-groups: Those who scored above vs. those below the RCI cut off = 1.96. This method for determining cut-offs is commonly used in psychotherapy research (Jacobson & Truax, 1991) and was used here to divide the sample *a posteriori* into two sub-groups with regard to outcome; $n = 16$ good outcome cases (RCI change > 1.96) and $n = 16$ poor outcome cases (RCI change < 1.96 ; note that the equal groups sizes was a result of chance).

Session selection. All psychotherapy sessions were audio-taped. From each therapeutic process, one session was chosen based on the patient's post-session alliance assessment (on the HAq-II). After considering all sessions, the session with the highest alliance rating for each therapy was chosen to be subsequently rated on emotion using the CAMS. However, because the first and last sessions of a treatment tend to involve specific therapeutic processes that were not of interest to this study, we chose to exclude those from the session selection process. Thus, if the highest alliance session happened to be the first or the last session, we moved on to chose the second-highest alliance session of the case.

Raters and training. Two raters conducted ratings using the CAMS as a process measure of emotion. One rater was a senior researcher, the other a PhD-level student, and both had over two years of extensive training in using the coding system involving about 40 hours of actual rater training on specifically prepared material from the original studies in which the CAMS was developed (i.e., different from material used in the present study). Raters also benefitted from periodic supervision and rater re-calibration by the first author of the scale.

Procedures for coding emotion. The current study followed all coding procedures for emotion as described by Pascual-Leone and Greenberg (2005; 2007). We applied continuous cross-classification ratings, which means that a CAMS code was given for every moment in the session being analyzed. In order to standardize the length of each emotion event, all raw

CAMS codes were then recoded in a further step taking a minimum presence of one minute per code as a threshold for occurrence (except the specific codes of *negative evaluation* and *existential need*, for which we used the frequency of codes given that their rating criteria imply shorter statements). Raters were blind to: one another's ratings, to the session alliance scores and treatment outcome of cases being coded, and to research hypotheses. One session was rated per patient. Reliability in this study was conducted using ratings for 17 cases (a 53% reliability sample). The result for inter-rater reliability on the distinct emotion categories was excellent (Mean Cohen's $\kappa = .82$; $SD = .14$, ranging between .61 and 1.00).

Statistical Analyses

In order to test hypothesis 1, which postulated that in good outcome cases, there would be a higher frequency of advanced meaning making components compared to poor outcome cases, we conducted a series of Chi-Squared statistics (between-group comparisons) for frequencies of a one-minute presence of each emotion category. In addition, a linear regression model (stepwise; all ten emotion components entered) predicting symptom change on BDI (pre-post) was performed.

Hypothesis 2 postulated that advanced meaning making components would be sequentially preceded by intermediate and early expression of distress of emotional processing. In order to test this process hypothesis, we conducted sequential analyses working backwards from any advanced meaning-making component (at level 4, as starting point of the sequence; see Figure 1), back to level 3 (existential need or negative evaluation), to level 2 (fear/shame or rejecting anger), and finally (as endpoint of working backwards) level 1 (global distress). This means that we counted the number of occurrences where level 4 was immediately preceded by level 3, and so on. Only the first such sequence per session was analyzed and partial sequences (i.e. level 4 preceded by level 3; 3 preceded by 2; 2 before 1) were also included in the results. Exact binomial sign tests were conducted to test the above-

chance occurrence of each sequential link. For exploratory purposes, we also compared the two groups by using Chi-Square statistics, contrasting the percentages of occurrence of each sequential link at a given level of emotional processing.

Hypothesis 3 stated that the slope on the Degree of Transformation Scale would be positive and that it would be steeper in good outcome cases as compared to poor outcomes. In order to test this hypothesis, we followed the strategy of Pascual-Leone (2009) and performed individual regression models for each case and entered the regression coefficients (slope) into a between-group comparison (*t*-test for independent samples). We also correlated these coefficients with symptom change on BDI and GSI (pre-post) using Pearson correlations.

Finally, hypothesis 4 assumed that good outcome cases (as compared to poor outcomes) would have shorter periods of emotional collapse (into early expressions of distress) during the final portion of a treatment session (following Pascual-Leone, 2009). To measure this, we only examined the last fifth (20%) of codable emotion units for a given session. The average duration of emotional collapses were then tested using between-group comparison (*t*-tests for independent samples). The amount of time patients spent in early expressions of distress at the end of their sessions was also entered into a regression model to predict symptom change on BDI and GSI (pre-post).

In order to avoid reporting spurious effects, we controlled for the number of tests related to each hypothesis using a Bonferroni correction.

Results

Preliminary Analyses: Identifying Treatment Outcome Groups

Reliable clinical change was computed using RCI statistics (Jacobson & Truax, 1991): Out of the study sample ($N = 32$), 16 (50%) had clinically significant change (i.e., good outcome cases), 14 (44%) remained unchanged and 2 (6%) deteriorated (i.e., together these

formed $n = 16$ poor outcome cases). Before embarking into the detailed report of the results, we demonstrate equivalence of the two sub-groups on various coefficients (see Table 1).

When comparing the sub-groups with regard to socio-demographic variables, no difference was found in gender, age, length of psychotherapy, or the session number being coded. Also concerning the level of symptoms at intake, as measured using the BDI and the GSI, or diagnostic co-morbidity no significant differences were found. In regards to the specific session selected per case for coding (i.e., determined by highest alliance session), average therapeutic alliance scores ranged between groups from 20 and 24, which represents a strong alliance overall and no significant difference between groups. These selected sessions were typically in the last third of treatment (at session 22) and the session numbers were comparable between groups. Finally, in the process of coding emotion, the average number of CAMS-codes made per session ranged between 24 and 25 minutes worth of codable content, which again did not differ between the two groups. Therefore, we consider both groups as equivalent on key variables. The remaining analyses only examine codable CAMS-units.

In-session Frequencies of Affective-Meaning States (CAMS)

Using one minute units of each emotion category as the minimum threshold for coding, we found a single category to be significantly different between groups: grief / hurt. When considering sessions with the strongest alliance of short-term dynamic psychotherapy, good outcome cases were more likely to experience at least one minute of grief (or psychological hurt), when compared to poor outcome cases ($\chi^2 = 6.56, p = .01, d = 1.23$; see Table 2). No other single emotion category was significant, nor was a composite category that combined all advanced meaning making states. (Note: These findings were the same when we made the minimum coding unit 30, 60, or 90 seconds, suggesting the margin of difference that might be observable to a therapist in session is quite robust). Furthermore, when a stepwise linear regression was used to predict pre-post symptom change on the BDI-II, again, only one

significant predictor emerged. The raw number of minutes a patient expressed grief and hurt explained 19% of the treatment's outcome variance ($R = .44$; $t = -2.16$, $p = .04$). This effect was not found when predicting change on the GSI.

Sequences in the Model of Emotional Processing

When we used the current sample of cases in short-term dynamic psychotherapy to test sequences in the emotion transformation model (as was elaborated in experiential psychotherapy; Pascual-Leone & Greenberg, 2007), we found evidence favoring the model. Working backwards within the patterns predicted by the model (see Figure 1), we counted the number of two-step ordered sequences and found that the expression of fear, shame or rejecting anger was directly preceded by the experience and expression of global distress (level 1) in 12 out of 26 (46%) of all cases. Given the observed frequencies of these codes (see Table 3) an exact binomial sign test indicated that this sequential pattern emerged significantly more frequent than chance (two-tailed, $p = .04$; when chance was $p = .48$). In turn, the expression of an existential need or negative evaluation (level 3) were immediately preceded by the experience of fear, shame, or rejecting anger (level 2 states) in 13 out of 26 (50%) of all cases. Accounting for the observed frequencies of these codes, an exact binomial sign test indicated the pattern was attributable to chance (two-tailed, $p = .99$). Finally, any advanced meaning making states (i.e., level 4) were immediately preceded by the expression of an existential need or negative evaluation (i.e., level 3) in 3 out of 24 (13%) of all cases, which an exact binomial sign test indicated as being significantly less often than chance, $p = .03$ (two-tailed; when chance was $p = .48$). However, interestingly: testing the sequential links between level 4 (advanced meaning making components) as directly preceded by level 2 (fear/shame or rejecting anger; i.e., leaving out level 3), an exact binomial sign test indicated as being more often than chance, $p = .00+$ (two-tailed, when chance was $p = .26$). These

finding offer limited support for sequences in the model, although may also be a result of insufficient data regarding level 3.

In the original hypothesis of Pascual-Leone and Greenberg (2007), they argue that sequential patterns according to the model are likely to be aspects of emotional development that are independent of a patient's outcome trajectory (i.e. good vs. poor outcomes). For this reason they examined all cases together, however, in the current context of a final treatment outcome we considered it worthwhile to explore the possibility of between-group differences in sequential patterns. Level 2 was immediately preceded by level 1 in 9 out of 13 good outcome cases (69%), while this was true only for 3 out of 13 poor outcome cases (23%), which represents a significant between-group difference ($\chi^2 = 3.90, p = .04$). The advanced and intermediate parts of the model's sequence did not differ between sub-groups (good vs poor outcome; level 4 preceded by level 3: $\chi^2 = .22, p = .64$); level 3 preceded by level 2: $\chi^2 = .00+, p = .97$; see Table 3). However, interestingly: testing the sequential links between level 4 (advanced meaning making components) as directly preceded by level 2 (fear/shame or rejecting anger; i.e., leaving out level 3), revealed a statistical trend ($\chi^2 = 3.23, p = .07$; see Table 3).

Together, these tests indicate global distress (level 1) seems to have an important place at the very beginning and is followed by either fear, shame, or rejecting anger (i.e., Level 2 states) as part of a transformational sequence in short-term dynamic psychotherapy. Moreover, this finding is particularly true for good outcome cases as contrasted with poor outcomes. Next, as good outcome patients moved from fear, shame, or rejecting anger (level 2) a trend in the data suggests the possibility of a subsequent step, preparing patients for the adaptive emotion components later such as hurt and grief.

In-session Progression and Collapse as Related to Emotional Transformation

To test the next hypothesis, all emotion-components were collapsed into a 9-point ordinal measure referred to as the Degree of Transformation Scale (see Pascual-Leone, 2009; Pascual-Leone et al., 2014). When the slope of this transformation scale was regressed onto the in patients' time in session, we found a mean adjusted β -coefficient for the entire sample of $-.06$ which is not significantly different from 0. Similarly, good outcome cases $-.05$, as compared to poor outcome cases $-.07$, were not significantly different ($t(1, 30) = .13, p = .90$; equal variances not assumed). So we did not find an overall in-session progression in terms of emotion transformation, neither overall nor for any of the sub-groups. Similarly, these coefficients were not significantly related to symptom change (with delta GSI: $r = .34, ns$; with delta BDI: $r = .05, ns$). However, variance in the overall transformation coefficient was significantly greater in the good outcome cases as compared to poor outcome cases ($SD_{\text{good outcome}} = .47$; $SD_{\text{poor outcome}} = .31$; Levene's test for equality of variance: $F = 4.44, p = .04$). This finding supported our hypothesis of good sessions demonstrating more emotional variability.

In a final analysis, we focused only on the presence of early expressions of distress as they emerged in the final portion of a given session (i.e., the last fifth of coded emotion), which was taken as evidence of an emotional collapse. In this analysis, we addressed the question: To what extent do patients collapse (regress) into less productive expressions of distress? Because the total amount of expressed emotion was different depending on the patient, this question was examined using "number of minutes collapsed" as a percentage of the final portion of each session. On average in the final portion of a session, 67% (i.e., 3 minutes) of all coded emotion demonstrated that the patient was still in some state described as an early expression of distress (top of Figure 1). However, when comparing between sub-groups, good outcome cases spent 54% of coded emotion in early expressions of distress, whereas poor outcome cases spent 79 % collapsed into early expressions of distress. This

difference was statistically significant ($t(1, 30) = 2.11, p = .04; d = .74$). When these late session collapses (into early expressions of distress) were taken as a single predictor for the entire sample, it explained 12% of the variance in post-treatment change on the BDI ($R = .34, t = 1.98; p = .05$).

Discussion

The present study investigated a sequential model of emotional processing in short-term dynamic psychotherapy (STDP). While this is the first time a non-experiential treatment is used to examine the model, STDP is a particularly promising context for this, given that emotional processing is understood to be at the core of the treatment approach (Davanloo, 1980; Fosha, 2000; McCullough et al., 2003). In order to take into account the complexity of change associated with emotions in therapy sessions, we adopted a transformation perspective on emotional processing (Greenberg & Pascual-Leone, 2006). As such, the study allows one to generalize the conclusions drawn by Pascual-Leone (2009) and Pascual-Leone and Greenberg (2007) to a different set of therapeutic techniques and a slightly different patient population (i.e., patients with adjustment disorder and depressed mood). In addition, we also were able to make a more explicit link between emotion processes and therapeutic outcomes produced at the end of therapy, while controlling for the therapeutic alliance as a contextual variable. In short, Pascual-Leone and Greenberg's was a process-to-process study, while the current study examined process-to-outcome. Finally, this study has explored the transportability of the Classification of Affective Meaning States, an observational measure of patient emotion: Demonstrating acceptable reliability for another team of raters as well as applying the instrument to sessions from a different language and culture, lends methodological strength to the validity of the coding system.

Emotional Sequences and Flexibility: Implications for Treatment

The results indicate that the sequential model of emotional processing is able to explain parts of the therapeutic change in short-term dynamic psychotherapy for adjustment disorder. The observation that global distress, an undifferentiated state of arousal with low levels of actual meaning, is immediately followed by the next step of more specific and maladaptive fear, shame, or rejecting anger, indicates the first two steps in engaging and differentiating painful emotion. This transformational sequence of qualitatively different states holds overall but seems to be especially true for good outcome cases. The finding suggests that when therapists are confronted with a patient in global distress, it would be most helpful to facilitate the patient's articulation of primary maladaptive fear or shame, depending on the patient this might mean, e.g., focusing on a core sense of inadequacy, or a fear of being left alone. Moreover, these results suggest that it is ill-advised for therapists to either stay with vague and undifferentiated (i.e., less specific and therefore less productive) expression of distress, but that it may also not be good to push the patient too quickly through a process by moving directly to grieving of the loss, which is a subsequent step the patient may not yet be ready to access.

Contrary to hypotheses, experiencing of an existential need, such as fundamental needs related to interpersonal connection or to identity affirmation were not observed as key steps in this data set. However, the direct sequence between the experiencing of fear/shame (level 2) and hurt/grief and assertive anger (level 4) was significant and tended to be more present in good-outcome cases. One interpretation of these findings is that in short-term dynamic psychotherapy (STDP), patients may move from primary maladaptive emotions to more adaptive ones without necessarily passing through the experience of an existential need (or the expression of a negative evaluation). However, this initial interpretation seems unlikely as it runs counter to psychodynamic theory, which holds that a patient's (conscious or unconscious) progressive *wish* (i.e., existential need) is at the center of intrapersonal

conflicts (Luborsky & Crits-Christoph, 1998). Another and perhaps more parsimonious explanation of these non-significant findings simply reflects the low rates of codes made by raters using our observational method. While therapists in emotion-focused therapy (the context of Pascual-Leone & Greenberg's, 2007, study and basis of the coding system) are often *explicitly* focusing on the articulation of patient needs, dynamic psychotherapists might be less explicit in this regard. Experiential therapists might directly facilitate the discussion of the existential need, whereas in psychodynamic psychotherapy a different process might be operative where these therapists intervene for example by interpreting repetitive patterns in the patient's life.

There are also methodological reasons for why the present study only found partial support for the hypothesized emotion sequence of change. In this study, the selection of sessions was based on high alliance scores, irrespective of emotion codes presenting in the target session or the temporal history of affective meaning constructions. In contrast, the model developed in the process-to-process study by Pascual-Leone and Greenberg (2007) was predicated on there being an initial in-session marker of global distress. It is possible that these different session/event sampling methods account for differences in findings with respect to full vs. partial sequences of emotion in the process of resolution. We should also note that the coding criteria we used for grief/hurt required that a need be at least *implicit* in the observed emotion, so the fact that grief/hurt emerged as a significant predictor in our study already suggests an existential need was at least implicitly present in the patient's narratives.

Perhaps also related to this different session/event sampling method, our hypothesis of steady in-session progression was not confirmed. However, higher emotional flexibility, i.e., a wider range of different emotional states being experienced in the target session, was positively related with therapeutic outcome. Finally, we were able to show that the amount of

time a patient spent in either secondary or primary maladaptive emotions (described together as *early expression of distress*) when at the end of the session, was a negative predictor of therapeutic outcome. In other words, the longer the regressions (i.e., collapses) into early expressions of distress, the less likely it was that the patient would have a good treatment outcome.

One Minute of Grief: What Kind of Sadness Makes a Difference?

Our findings speak to the importance of a patient's grieving experience during the good alliance sessions of short-term dynamic psychotherapy for adjustment disorder as a process that leads to symptom change. At the same time the findings clarify that productively “crying over a loss” is not necessarily an exhaustive process of purging but rather can be targeted and delimited. Ultimately, our micro-process analyses confirmed that grief lasting a minimum of one minute, probably occurring at a critical time, and within a holding interpersonal environment characterized by a strong therapeutic alliance, predicted the alleviation of depressive mood by the end of treatment. This result is consistent with the idea that productive weeping over a loss (i.e., “a good cry”) is concentrated in a very short amount of time, not exceeding a total of three minutes, as Young Andrade (2011) suggested in her clinical observations. It is interesting to also note that experiencing at least one minute of grief alleviated depressive mood, which was the chief presenting symptom of patients in the current study, but did not impact more global and somatic signs of distress.

However, to properly interpret findings of the present process-outcome study, we highlight the distinction made in terms of different kinds of sadness and their respective roles in the therapeutic process and in relation to outcome. Greenberg and Paivio (1997; Greenberg & Safran, 1989) have defined several forms of sadness, and the sequential model of Pascual-Leone and Greenberg focuses on two, providing concrete criteria for differentiating those experiences. The first type of sadness is a less productive state of secondary emotion often

characterized by whining, sobbing with self-pity, and undifferentiated upset or emotional turmoil. Moreover, while this kind of sadness is sometimes a secondary reaction to deeper emotional processes (Greenberg & Paivio, 1997), one of its defining features is that it is markedly less articulate than more primary emotion, is devoid of idiosyncratic meaning, and not well anchored in a specific narrative. For this reason Pascual-Leone and Greenberg have referred to it as *global distress*. Even so, engaging emotional experience stands as the starting point of a complex transformational process, and thus entering global distress seems to act as a necessary stepping-stone in the emotional processing that may eventually produce good-outcome cases. Nevertheless, as we found, if this state (together with the presence of fear, shame, and rejecting anger) was still present at the end of a target (high-alliance) session, it negatively predicted therapeutic outcome in short-term dynamic psychotherapy.

The second type of sadness discussed by Pascual-Leone and Greenberg (i.e., specific grief and hurt) is essentially primary adaptive sadness (c.f. Greenberg and Paivio), a highly productive, subjectively meaningful, and emotionally deep state of grief. This emotion is fundamentally a process of letting go and accepting the loss of a person, a relationship, a project, or is a process of accessing and fully acknowledging the impact of a deep psychological hurt. Moreover, in Pascual-Leone and Greenberg's (2005; 2007) operational definition of grief/hurt, an existential need is always implicitly (if not explicitly) at the core of this primary and adaptive sadness. Our results on psychodynamic psychotherapy suggest that this treatment approach facilitates a more implicit processing of the "need"/wish (and less explicit, as favored in experiential psychotherapy). It remains an open question as to whether an explicit facilitation of the need may further increase the effectiveness of the intervention. In any case, high levels of specificity in the meaning of one's personal loss is what makes the experience of adaptive grief so highly idiosyncratic, meaning laden and productive. These empirical findings have further underlined this major distinction in types of emotion as being

one of importance across multiple approaches to psychotherapy and may represent a key distinction in human emotional experience.

Limitations and Future Directions

Several limitations of the present study need to be noted. In establishing links between emotional processing and outcome, we have not taken into account the patient's quality of emotional processing at intake, as a starting condition of the process (Lambert, 1992; Sachse, 1992; Wong & Pos, 2014). Furthermore, by focusing on one single session, the highest-alliance session, we controlled for this important variable, but we cannot exclude that other biases were introduced. For example, the finding that grief and hurt was the only emotion to yield significant outcome predictions might be related to this particular method of session selection. Because a patient's in-session experience of grief/hurt preceded the post-session alliance ratings, these variables may not be entirely independent. The disclosure of grief to ones therapist may have subsequently led to increased alliance ratings for that session, indirectly influencing the sessions that were later selected for analysis. While this possibility does not undermine the observed significance of our process-outcome findings, it does raise the issue of how event selection in process research may impact the relationships observed. If this were the case, for example, an alternate method of session selection (i.e., a patient's post session ratings on personal confidence) might reveal other emotions from the model (i.e., assertive anger) as also being important for outcome.

On another note, some may raise the criticism that collapsing existential need with the negative evaluation on an intermediate level of processing may confound two very dissimilar processes. However, the between-group analyses still separated these model components allowing one to independently consider these effects. Finally, our study draws from a data set that is a naturalistic trial with the advantage that it reflects psychodynamic psychotherapy as it

is conducted in a current clinical practice. Even so, a disadvantage of this is that a number of extraneous variables could not be tightly controlled for.

Nevertheless, the results of the present study contribute to a detailed understanding of emotion transformation processes in psychodynamic therapy and beyond, as they unfold from one minute to the next, and this research perspective should be explored further. For example, we would argue that, even within a good alliance session, the exact timing to best facilitate adaptive grief is important and research should explore helpful vs. unhelpful moments for this (i.e., intervention *markers* for working on grief). In line with this, one may focus even more closely on the moment of grief, using micro-analysis to describe its emergence, development, and acceptance. In our study, we did not examine therapist contributions that may or may not be facilitating the process at hand. However, the present study was the first step, from an integrative perspective, in understanding emotional processing in psychodynamic psychotherapy. Further studies should take into account the issue of therapist responsiveness in a moment-by-moment fashion; this would be the next logical step in constructing a more comprehensive interactional model of sequential emotional processing. Finally, to allow for more integration across treatment perspectives, other forms of psychotherapy that emphasize emotional processing (i.e., behavioral or skills based treatments) should be used to further explore detailed emotional change and its relationship to therapeutic outcome.

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Table 1

Socio-demographics of the sample and good vs. poor outcomes

Variables	Total ($N = 32$)	Good ($n = 16$)	Poor ($n = 16$)	$t(1, 30)$	p	d
Gender (% Female)	75	75	75	0.00 ^a	.99	0.00
Age	24.72 (3.79)	23.50 (3.01)	25.94 (4.17)	-1.90	.95	0.36
Comorbid Depression	16	8	8	-	-	-
Comorbid Cluster B	7	3	4	-	-	-
BDI-II intake	10.50 (6.56)	12.69 (6.26)	8.31 (6.29)	1.79	.62	0.20
GSI intake	0.91 (0.57)	1.02 (0.55)	0.85 (0.60)	1.19	.32	0.34
Total number sessions	32.09 (10.57)	32.94 (9.86)	31.25 (11.50)	0.45	.48	0.08
Session number coded	22.88 (10.74)	20.63 (10.56)	25.13 (10.78)	0.08	.78	0.42
HAq of coded session	22.41 (8.72)	20.68 (9.24)	24.13 (8.10)	-1.12	.73	0.19
codable CAMS units	25.19 (11.39)	25.81 (12.18)	24.56 (10.91)	0.31	.81	0.05

Notes. BDI-II: Beck Depression Inventory - II; GSI: Global Severity Index of the SCL-90-R;

HAq: Helping Alliance questionnaire - II (measured at the end of the analyzed session);

CAMS: Classification of Affective Meaning States; ^a = exceptions to the column, gender and

comorbidity were examined using χ^2 test; All statistical tests were non-significant at level $p >$

.05.

Table 2

Between-group comparisons on affective-meaning states (one-minute presence)

Emotions	Good (<i>n</i> = 16)	Poor (<i>n</i> = 16)	Chi-Sq	<i>p</i>	<i>d</i>
	M (SD)	M(SD)			
<i>Early Expressions of Distress (levels 1 and 2)</i>					
Global Distress	9.92 (8.15)	8.58 (7.45)	0.14	.71	0.17
Fear / Shame	9.50 (6.16)	12.50 (10.10)	0.50	.48	0.36
Rejecting Anger	5.40 (3.97)	6.00 (5.29)	0.26	.61	0.13
<i>Intermediate (level 3)</i>					
Negative Evaluation	2.00 (0.00)	4.00 (0.00)	0.15	.70	-
Existential Need	4.00 (2.83)	0.00 (0.00)	1.21	.27	2.00
<i>Advanced Meaning Making (level 4)</i>					
Relief	2.00 (0.00)	0.00 (0.00)	-	-	-
Grief / Hurt	4.75 (1.81)	3.00 (0.00)	6.56	.01**	1.23
Assertive Anger	5.00 (4.90)	5.43 (3.26)	0.01	.92	0.10
Self-Compassion	3.00 (0.00)	4.50 (2.12)	0.43	.51	1.00
Acceptance	4.00 (1.73)	3.24 (1.98)	0.00	1.00	0.41
<i>Any AMM (Level 4)</i>	4.88 (5.22)	3.44 (3.79)	0.80	.37	0.32

Note. AMM = Advanced Meaning Making; Bonferroni's correction applied for 10 test; ** = $p < .01$.

Table 3

Sequential patterns of emotion: Rates of ordered emotional states as predicted by model

Sequences	Total ($N = 32$)		Good ($n = 16$)		Poor ($n = 16$)		χ^2	p
	n/total	%	n/total	%	n/total	%		
Level 1 	12/26	46	9/13	69	3/13	23	3.90	.04
Level 2  	13/26	50	7/13	54	6/13	46	.00	.97
Level 3 	3/24	13	2/13	15	1/11	9	.22	.64
Level 4 (baseline)	24	-	13	-	11	-	-	-

Note. Level 4 = (Advanced Meaning Making): Grief/hurt or Self-Compassion or Assertive Anger; Level 3 = Negative Evaluation or Existential Need; Level 2 = Rejecting Anger or Fear/Shame; Level 1 = Global Distress. Denominator: Number of patients who experienced a specific state; Numerator: Number of patients who experienced this specific state in the specified order. One-minute baseline of level 4: Total: 24; Good outcome: 13; Poor outcome: 11. ^a = Results for the partial sequence level 4 directly preceded by level 2 (leaving out level 3): Total 9/24 (38%); Good outcome 7/13 (54%); Poor outcome 2/11 (18%; $\chi^2 = 3.23$, $p = .07$).

Figure 1. A sequential model of emotional processing

(modified from Pascual-Leone & Greenberg, 2007)

